

# **THE U.S.D.I. OFFICE OF SURFACE MINING INITIATIVES RELATED TO COAL COMBUSTION BY-PRODUCTS (CCBs)**

## **1. HISTORICAL PERSPECTIVE OF OSM INVOLVEMENT**

1994 - Public Outreach on Technical Issues identified CCBs as an issue of concern for OSM

1995 - OSM conducts a national survey on interest in conducting a technical forum on CCBs that indicated a broad response within the coal mining community.

1996 - OSM initiates a multi-interest group steering committee consisting of experienced CCB professionals from universities, Federal and State agencies, professional organizations, and the industry to be responsible for the planning of a technical interactive forum.

1996 - The 1<sup>st</sup> CCB and Mining Forum was held at Southern Illinois University in Carbondale where 28 papers were presented in the Categories of:

- CCB Characterization
- Site Characterization
- Regulatory Requirements
- Design/Engineering/Planning
- Environment: Land & Water
- Monitoring & Evaluation
- Case Studies

1997 - Publish and distribute 1<sup>st</sup> Forum proceedings including:

- Participant & Steering Committee Recommendations
- Participant Evaluation
- Edited Discussion
- Outline of SMCRA requirements

1997 - Steering Committee develops CCB Information Network Website including:

- user friendly guide to the literature
- access to OSM library
- definition of terms
- State CCB contacts
- Listing of upcoming CCB events
- Copies of Forum Proceedings
- Chronology of EPA Rulemaking
- Access to related Websites

1998 - OSM joins the National Steering Committee of the Combustion By-Products Recycling Consortium in order to assist DOE with the selection of research projects related to improving the recycling of CCB materials.

- 1999 - OSM signs a MOU with DOE National Energy Technology Laboratory to cooperate on mutually beneficial CCB technical initiatives.
- 1999 - OSM joins the Technical Steering Committee of the Ash Utilization Symposium organized by the Center for Applied Energy Research at the University of Kentucky in order to encourage the presentation of mine related CCB research.
- 2000 - OSM cosponsors its 2<sup>nd</sup> CCB & Mining Technical Interactive Forum held at the facilities of the DOE National Energy Technology Laboratory in Morgantown, West Virginia where 25 papers were presented in the categories of:
- CCB Basics
  - Regulatory
  - Beneficial Uses at the Mine Site
  - Hydrology
- 2000 - OSM actively participates in the interagency advisory group to EPA concerning the lists of CCBs as hazardous materials under RCRA. The result was that OSM provided letters to EPA from its Director and the Assistant Secretary of Interior outlining 12 reasons why listing CCBs as hazardous was not warranted.
- 2000 - Following the EPA final determination in May of 2000, OSM joined EPA in a joint fact finding effort on the environmental impacts of CCB placement at mine sites prior to its proposed rulemaking in 2003.
- 2000 - OSM has provided ongoing technical assistance to the American Society for Testing Materials in their effort to develop standard testing methods for evaluating and designing CCB placement at mine sites.
- 2001 - Publish and Distribute the proceedings of the 2<sup>nd</sup> CCB & Mining Forum.
- 2002 - OSM is cosponsoring with DOE NETL, the Western Regional Ash Group, and SIUC its 3<sup>rd</sup> CCB & Mining Forum to be held at Golden, Colorado where papers will be presented in the categories of:
- CCB Basics
  - Testing & Terminology
  - Western Mining Applications
  - Regulatory Direction
  - Environmental Impacts to Ground Water

2. QUESTIONS??  
DO WE NEED ADDITIONAL FEDERAL REGULATIONS ON THE USE AND DISPOSAL OF CCBS AT COAL MINES???  
**IF NOT, WHY NOT?**  
  
**IF SO, SHOULD THEY BE:**  
EPA REGULATIONS??  
SMCRA REGULATIONS??
3. It has been said that NEW SOLID WASTE REGULATIONS MAY BE NECESSARY BECAUSE:  
APX 2% of **Utility Disposal Sites** have toxic leachate.  
  
Mine Sites are just as likely to produce toxic leachate as Utility Disposal Sites  
  
SMCRA Ground Water Monitoring may be inadequate to detect toxicity  
  
SMCRA Performance Bonds may be of insufficient duration.
4. OSM finds (based on extensive technical involvement with the issue for the last 6 years) that the existing Scientific data does not support a need for new Federal regulations under RCRA or SMCRA  
We are unaware of any scientific data where CCB fills at any SMCRA mine site has resulted in the generation of leachate that would threaten public health or degrade the environment.  
  
Scientific research that has been ongoing since the early 1980s indicates that most CCB use at mine sites is environmentally beneficial.  
  
SMCRA requirements for permitting, performance bonding, and protection of ground and surface water quality and public drinking sources are:  
adequate to protect the public and environment.
5. **DIFFERENCES BETWEEN SMCRA SITES AND UTILITY SITES**  
There is no scientific basis for equating leachate potential from utility disposal sites and SMCRA mine sites.
6. **DIFFERENCES BETWEEN UTILITIES AND MINES**  
  
Geography, Geology, Hydrology (Speak to Chart) CCB USE AT MINE SITES
7. **DIFFERENCES BETWEEN UTILITIES AND MINES**  
  
CCB Type, Reclamation, Regulation (Speak to Chart)

8. TYPICAL UTILITY CCB STORAGE/DISPOSAL AREA
9. TYPICAL CCB FILL AT MINE
10. ARIPPA (ANTHRACITE REGION INDEPENDENT POWER PRODUCERS ASSOCIATION) STATISTICS  
1999 - 5.1 Million tons of FBC used to reclaim abandoned mine lands and control acid mine drainage.

**ACAA STATISTICS**

1999 - 1.9 million tons (1.8% of the total non FBC material) used at mine sites.

11. IMPACTS ON BENEFICIAL USE  
Additional Federal regulation of CCBs on mine sites could reduce their beneficial use.
12. CCB USE AT MINE SITES  
According to recent study by Dr. Ishwar Murarka, CCBs have been placed at apx 100 mine sites in 17 of the 26 coal States including: AZ, CO, IA, IL, IN, KY, MD, MO, MT, NM, ND, OH, OK, PA, TX, WV, and WY.

Types of Use include:

Non toxic fills

Control of Acid Mine Drainage

Construction Material

Injection into underground mines for subsidence control and control of Acid Mine Drainage

Soil amendments for Abandoned Mine Lands

In summary, CCBs are primarily used for environmentally beneficial uses at mine sites.

**13. SMCRA PERFORMANCE BOND**

30 CFR 800.13(a)(1) Performance bond liability shall be for the duration of the surface coal mining and reclamation operation and (the extended revegetation liability period) or until achievement of the reclamation requirements of the Act, regulatory programs, and permit, whichever is later.

**14. DURATION OF PERFORMANCE BOND  
BOND RELEASE IS NOT DETERMINED BY TIME BUT BY ACHIEVING THE  
PERFORMANCE REQUIREMENTS**

In the case of Acid Mine Drainage, the bond can not be released until the conditions that produce the AMD have been corrected.

The lesson here is that (assuming CCBs at the mine site posed a threat to public health or the environment) the bond can be held as long as it takes to ensure that the situation is corrected prior to bond release.

15. SMCRA PERFORMANCE STANDARDS

30 CFR 816.41 Minimize disturbance of hydrologic balance by protecting ground & surface water from pollutants.

- Includes a requirement for replacement of water supply impacted by contamination.
- Requires water monitoring based on probable impacts.

16. SMCRA PERMIT REQUIREMENTS

30 CFR 780.21 Probable Hydrologic Consequences Determination

- Detailed information on potential for pollution of ground and surface water
- Detailed hydrologic reclamation plan
- Ground & Surface water monitoring plan

17. CONCLUSION

Do we know everything we need to on potential environmental effects?? NO

Do we need more research on potential environmental effects?? YES

18. FINAL QUESTIONS

If additional Federal regulations on CCB placement at Mine sites are to be proposed?

- WHAT IS THE PROBLEM??
- WHERE IS THE SCIENCE??